

WHAT IS CLAIMED IS:

1. A communication protocol converter comprising:
  - (a) a first modular communication jack having:
    - i) a housing defining an open cavity and a segregated interior chamber;
    - ii) a connector port having a plurality of electrical contacts positioned within said open cavity;
    - iii) at least one circuit board incorporating Ethernet to raw data conversion circuitry components for a first communication protocol disposed within said interior chamber in electrical communication with the electrical contacts of said connector port; and
    - iv) a memory positioned on said circuit board in electrical communication with said conversion circuitry for a first communication protocol for receiving converted data;
  - (b) a second modular communication jack having:
    - i) a housing defining an open cavity and a segregated interior chamber;
    - ii) a connector port having a plurality of electrical contacts positioned within said open cavity;
    - iii) at least one circuit board incorporating Ethernet to raw data conversion circuitry components for a second communication protocol disposed within said interior chamber in electrical communication with the electrical contacts of said connector port;
    - iv) a memory positioned on said circuit board in electrical communication with said conversion circuitry for said second communication protocol for receiving converted data; and
  - (c) a bidirectional data interface electrically interconnecting said memory of said first communication jack with said memory of said second communication jack.
2. The communication protocol converter of Claim 1 wherein said first communication protocol is Internet protocol version 4 and said second communication protocol is Internet protocol version 6.

3. The communication protocol converter of Claim 1 wherein said first communication protocol is Internet protocol version 6 and said second communication protocol is Internet protocol version 4.

4. The communication protocol converter of Claim 1 wherein said conversion circuitry components of said first and second modular communications jacks includes magnetic circuitry and controller circuitry.

5. The communication protocol converter of Claim 4 wherein said conversion circuitry components includes LED circuitry.

6. The communication protocol converter of Claim 4 wherein said circuit boards each define first and second opposed sides and said conversion circuitry components are positioned on both first and second sides of said circuit boards.

7. A communication protocol converter comprising:

    a housing defining first and second open cavities and a segregated interior chamber;

    each of said open cavities incorporating a plurality of electrical contacts positioned within said open cavities to form first and second connector ports wherein said first connector port is adapted to interface with a first communication protocol and said second connector port is adapted to interface with a second communication protocol; and

    at least one circuit board incorporating communication protocol conversion circuitry components disposed within said interior chamber in electrical communication with the electrical contacts of said first and second connector ports wherein said conversion circuitry bidirectionally translates communication protocols.

8. The communication protocol converter of Claim 7 wherein said protocol conversion circuitry comprises;

    a microprocessor incorporating embedded software for converting a first communication protocol received at said first connector port to a second communication protocol output to said second connector port.

9. The communication protocol converter of Claim 8 wherein said microprocessor converts a second communication received at said second connector port to a first communication protocol output to said first connector port.

10. The communication protocol converter of Claim 7 wherein said first communication protocol is Internet protocol version 4 and said second communication protocol is Internet protocol version 6.

11. The communication protocol converter of Claim 7 wherein said first communication protocol is Internet protocol version 6 and said second communication protocol is Internet protocol version 4.

12. A method of converting Ethernet data from a Internet protocol 4 to Internet protocol 6 comprising the steps of:

- (a) receiving Internet protocol 4 Ethernet data;
- (b) removing Internet protocol 4 header data;
- (c) inserting Internet protocol 6 header data;
- (d) recalculating necessary Internet protocol header fields;
- (e) outputting corresponding Internet protocol 6 Ethernet data.

13. A method of converting Ethernet data from a Internet protocol 6 to Internet protocol 4 comprising the steps of:

- (a) receiving Internet protocol 6 Ethernet data;
- (b) removing Internet protocol 6 header data;
- (c) inserting Internet protocol 4 header data;
- (d) recalculating necessary Internet Protocol header fields and IPv4 checksum
- (e) outputting corresponding Internet protocol 4 Ethernet data.

14. A method of converting Ethernet data from a first communication protocol to a second communication protocol comprising the steps of:

- (a) receiving Ethernet data having a first communication protocol;
- (b) removing the first communication protocol header data;
- (c) inserting a second communication protocol header data;
- (d) recalculating any necessary protocol header fields and options;
- (e) outputting corresponding Ethernet data having a second communication protocol.